BRANCHING OUT
IPM NEWSLETTER FOR TREES & SHRUBS

Amelanchier Ailments

Dawn Dailey O'Brien, Plant Pathology & Plant-Microbe Biology Section, Cornell University

Whether you know it as amelanchier, shadbush, serviceberry, or Juneberry, this early blooming tree has year-round interest with smooth gray bark, edible berries, and beautiful fall color. *Amelanchier* is the genus of about 20 species of shrubs and small trees.

Amelanchiers are in the rose family (Rosaceae) and therefore subject to many of the common insect and disease problems of other ornamentals in that family (ex. crabapple, hawthorn, mountain-ash, etc.). We'll discuss those that we most commonly encounter although there are others such as fireblight and powdery mildew.

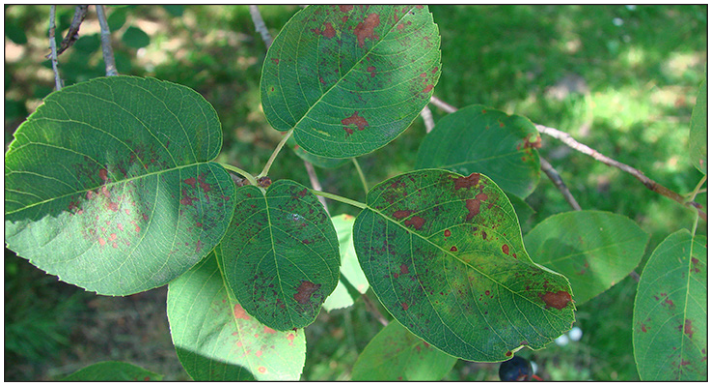
Entomosporium Leaf Spot (38)

This disease is caused by the fungus *Diplocarpon mespili* (*Entosporium mespili*) and is sometimes called Fabraea leaf spot. Other common hosts include hawthorns, quince, photinias, pears and flowering crabapples.

Leaf lesions are pinhead-sized black spots surrounded by yellow haloes on the upper surfaces of infected leaves. As the spots enlarge and coalesce, they will cause sufficient damage to induce defoliation. The fungus overwinters in fallen leaves and twig cankers and, in the case of amelanchier, they may also overwinter on the fruit.

Symptoms usually occur late in the season and the disease is rare enough that management is usually not needed except on highly susceptible species of amelanchier which develop twig and branch dieback if they are defoliated several successive years.

Get rid of fallen leaves either by destroying or composting to reduce the primary inoculum. If the outbreak is severe, spray with a registered fungicide as leaf buds open and twice thereafter at 10 to 14 day intervals. Additional applications may be needed in rainy years. Plant resistant amelanchiers such as 'Autumn Brilliance', 'Magnificents' and 'Succes' to avoid this disease.



Entomosporium leaf spot on amelanchier © Dawn Dailey O'Brien

Lace Bugs (205)

The most common lace bug found on amelanchier is the hawthorn lace bug (*Corythucha cydoniae*). Other hosts for this particular species are hawthorn, flowering quince, pyrancantha, cotoneaster, mountain-ash and crabapple.

Feeding by these lace bugs results in stippled foliage. The stipples eventually coalesce. The leaves turn yellow then brown. Dieback may occur, and heavily infested plants may die. Look on the undersides of leaves for the immature and adult lace bugs. The nymphs are black with long spines. The adults have lace-like wings and are ⅛ inch long. Brownish-black fecal spots are also seen on the undersides of the leaves.

In the spring the overwintered adults lay eggs in small groups on lower surfaces of leaves. The nymphs emerge and then feed. The adults mate, and eggs are laid in the leaf tissue. This second generation feed, mature and overwinter until the following spring.

Early detection of lace bug activity is essential for effective management. Their natural enemies are rarely abundant enough to effectively suppress damaging populations. To manage *Corythucha* spp. lace bugs spray both upper and lower leaf surface in mid-May (239–363 GDD_{50}) and again in mid-July (1266–1544 GDD_{50}).

Lacebug damage on amelanchier © Jeffrey Hahn, University of Minnesota Extension

Potato Leafhopper (199)

Potato leafhopper(PLH) is a migratory pest in the Northeast, usually appearing first around late May. Among its common woody hosts are amelanchier, red, Norway and sugar maples, redbud, *Sophora*, *Cytisus*, wisteria and birch, although there are many others.

Damage on the foliage appears as "hopperburn". This consists of marginal yellowing or necrosis on leaves, with curling and stunting of leaves and terminals on many woody and herbaceous ornamentals.

The adults are pale green insects that fly readily when disturbed and mostly reside under leaves. The nymphs are also pale green but cannot fly and tend to walk sideways. They are main cause of damage. Sometimes only cast skins are present if the insects have moved on.

'Hopperburn' on amelanchier caused by Potato Leafhopper © Daniel Gilrein

The feeding injury is so different from that due to most other insects that people are inclined to suspect a fungal or bacterial twig blight, late spring frost, herbicide damage, drought or fertilizer injury or anything other than leafhoppers for the damage.

Management of potato leafhopper is usually not warranted, especially for older established trees. Potato leafhopper is easily controlled with any of the leafhopper materials. Young, vigorously growing trees (such as in nurseries) are more susceptible and treatment may be needed in years when PLH populations are high.

To prevent PLH injury, the first treatment is usually needed starting in early to mid-June. Foliar applications may need to be repeated once or twice at 2-week intervals, possibly more often if there are sudden 'invasions' from cut alfalfa or other sources. Soil application of Merit to landscape trees in fall or early spring may prevent most early damage. Re-check in mid-July and mid-August to determine the need for treatment. Concentrate sprays on new growth. Also, keep in mind that overfertilization may increase leafhopper populations.

Nailhead Canker (AKA blister canker) (100)

The fungus (*Biscogniauxia marginata*) that causes nailhead canker attacks stressed trees and causes diffuse cankers on a branch or trunk. It grows aggressively if tree is under moisture stress thus shows up more frequently following drought years. The point of infections is usually at a wound. In addition to amelanchier other common hosts include mountain-ash or apples.

Dead branches or a dying top are often the first symptoms noticed. Inspect the plants by tracing the dead branches down and look to see if there are sections where dark, elongate cankers exist. These cankers are often centered on a crack or wound. Internal symptoms include reddish brown discoloration of the sapwood.

The fruit bodies (up to ¼ inch diameter) resemble nail heads or the tops of small golf tees and burst through the bark as conspicuous blisters from the cankered areas. The bark often curls back.

No fungicides are registered to control this disease. Prune disease branches and be sure plants are watered adequately.

Distinctive fungal fruiting structures of nailhead canker © Dawn Dailey O'Brien

Quince Rust (131)

This disease, caused by *Gymnosporangium clavipes*, stunts and kills fruit and causes swelling, distortion, and death of twigs and petioles, but leaf spots are less commonly produced. Cankers may be seen on small branches.

In addition to amelanchier, other broad-leaved hosts of this pathogen include hawthorn, quince, apple, and mountain-ash.

On the broad-leaved hosts, white tubes, about the size of pencil lead, protrude as far as ¼ inch from the surface of infected fruit, and bright orange spores are shed from these tubes and carried by wind back to junipers for the fall infection cycle.

This disease is more of a threat to juniper (its alternate host) than to the broad-leaved hosts. Bark on infected twigs is usually cracked and rougher than surrounding healthy tissue. In late April and May, short gelatinous "cushions" of spore-bearing tissue emerge from these swollen areas on junipers. The spores from these must find their way to leaves of twigs of the broad-leaved host.

The light colored cylindrical tubes (fruiting bodies) of quince rust are uniformly protruding from the amelanchier fruit © D. D. O'Brien

Treat amelanchier and other broad-leaved hosts in the spring when the fungus sporulates on junipers.

Roundedheaded Appletree Borer (131)

Species of *Amelanchier, Malus, and Sorbus* are most common hosts but you will also find these pests on hawthorn, pear, quince, and cotoneaster.

Adult females have bodies that are about ⅛ inch wide and ¾ inch long (with antennae that extend another ¾ inch). They have five stripes of approximately equal widths running from head to wing tip with alternating colors of olive brown and white. Males are about 20 percent smaller. Females start laying eggs in early June in southeast NY (1–2 weeks later farther north) and will continue for up to 40 days. Eggs are laid in longitudinal slits chewed in the bark at the root collar, often where the scion and rootstock join. Unlike so many other species of borers which are attracted to stressed trees, these borers seem to prefer the healthiest specimens for their egg-laying. At first, the egg laying sites are inconspicuous, but they become more noticeable when frass from developing larvae gets pushed out of the entrance holes. When the frass appears, carefully remove the larvae from galleries with a sharp knife.

Management should be directed toward preventing females from laying eggs and toward early detection and elimination of the young larvae. To prevent egg laying and to improve chances for detection of castings signaling new infestations, keep the root collar/graft union area free of weeds and sprouts. Egg laying might be reduced if soil is hilled up over the graft. Use wire mouse guards rather than plastic ones to allow predators and parasites ready access to egg-laying adults. Populations of feeding adults can also be reduced by foliar applications of a registered pesticide. Treat in late June (802–1029 GDD_{50}) and again in late July (1514–1798 GDD_{50}).

Holes in amelanchier caused by the roundheaded appletree borer (RHAB). The red paint highlights the holes. Inset: Adult RHAB. Both photos © Dawn Dailey O'Brien